Summary of
Economic Study of the Burger Gas Discovery, Chukchi Shelf, Northwest Alaska

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July 2001
Revisions December 2004

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Background

The Burger prospect underlies all or parts of 50 OCS tracts (189,800 acres within trap closure) on the Chukchi shelf 80 miles off northwestern Alaska. Thirty-seven tracts were leased for nearly $170 million in 1988. Shell-Western Exploration drilled the Burger #1 well during the open-water seasons of 1989 and 1990. The Burger well encountered a significant gas show in a 107-foot thick Cretaceous sandstone at 5560 feet. Flow tests were not conducted, but gas and condensate were recovered by formation sampling devices.

The well was plugged and abandoned, and additional appraisal wells were not drilled. Estimates for discovered gas resources in 1993 ranged from 2 Tcf to 10.5 Tcf, with a mean estimate of 5 Tcf.

The potential discovered resources at Burger were re-appraised in late 2000. The revised resource estimates based on that study range from 8 Tcf to 27 Tcf, with a most likely estimate of 14 Tcf of gas and 724 MMbbl of condensate.

BURGER CONDITIONAL* DISCOVERED RESOURCES-YEAR 2000

Fill Model	Pool Area (Acres)	Gas Resources (Tcf)			Condensate] (Mmb)		
		F95	Mean	F05	F95	Mean	F05
Minimum	52,516	2.389	7.629	17.256	107	393	925
Most Likely	97,545	4.335	14.038	31.384	203	724	1,700
Maximum	189,803	8.496	27.472	63.210	371	1,404	3,370

*No geological risk has been applied to these gas resource estimates. Success factors associated with reservoir presence (0.90) and sufficient (>10%) porosity for productive reservoir formation (0.75) yield an overall geologic chance of success of 0.675 for Burger pool discovered resources. **Risked** mean gas resources for the 2000 assessment would then be: 5.150 tcf (minimum case); 9.476 tcf (most likely case); and 18.544 tcf (maximum case). **Risked** mean NGL liquid resources for 2000 would be: 265 mmbo (minimum case); 489 mmbo (most likely case); and 948 mmbo (maximum case).

Economic Analysis

The engineering and economic simulations conducted in 2001 were based on a model that employed subsea wells and delivery of wet gas through an overland pipeline to Prudhoe Bay. The model also assumed that a new gas pipeline system from the North Slope would be constructed by 2007, and gas delivery by Burger would begin in 2008. Optimizing the engineering design and considering field economic life (22 years) led to a modeled reserve volume of 11.5 Tcf of gas and 600 MMbbl of condensate. At peak rate the Burger field would produce 1.68 Bcf/d and 85,000 bbl/d (condensate).

A series of discount cash flow models were run to define the threshold market price for gas and condensate under a variety of economic conditions. Very optimistic assumptions were made concerning the technology requirements,

the development schedule, and capacity of future gas infrastructure on the North Slope. The standard model found threshold prices for Burger gas delivered to the U.S. Midwest of $5.22/Mcf (gas) and $29.34/bbl (condensate marketed through TAPS).

Economic Scenarios (12% discount rate; 3% inflation; gas price BTU parity)	Threshold Gas Price ($/Mcf) (2000$)
1. Standard NPV model	$5.22
2. Zero inflation of prices/costs	$4.88
3. No condensate sales	$6.71
4. Use 0.66 gas price BTU factor	$4.68
5. Use flat nominal gas prices	$8.00
6. Use 8% discount rate	$4.56
7. Assume 1% growth in gas price above inflation	$4.63

Conclusions

Burger could represent the largest hydrocarbon discovery to-date on the Alaska OCS. However, volumetric estimates for the Burger pool are highly speculative because only one well was drilled on the very large structure.

Untested arctic technology, such as subsea wells and year-round operations in pack ice conditions would be required. The accelerated development schedule did not allow delays associated with permitting or legal obstacles.

Even under a very optimistic set of assumptions, Burger is a marginal development opportunity. Development costs of $11 billion and operating costs of $800 million per year must be offset by commodity prices somewhat higher than historic norms (<$3.00/Mcf). Higher prices (>$5/Mcf) have characterized the U.S. Midwest market in recent years, but price volatility remains a significant risk to development of Burger prospect.

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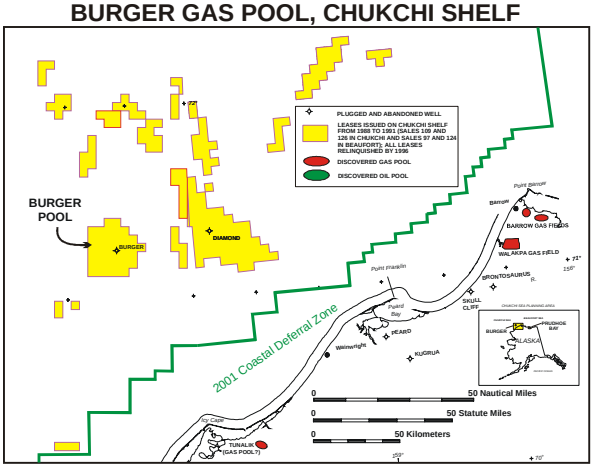
BURGER GAS POOL, CHUKCHI SHELF



CHUKCHI SEA AND KOTZEBUE SOUND SEDIMENTARY BASINS